(FILE 'HOME' ENTERED AT 08:17:16 ON 27 MAR 2001)

FILE 'CAPLUS, BIOSIS, MEDLINE' ENTERED AT 08:17:42 ON 27 MAR 2001

L1	28678	S MUCIN
L2	50	S L1 AND ENDOCYTOSIS
L3	10	S L2 AND (TRANSFER? OR TRANSFORM? OR TRANSFECT?)
L4	3	S L3 AND DNA
L5	1	DUP REMOVE L4 (2 DUPLICATES REMOVED)
L6	6	DUP REMOVE L3 (4 DUPLICATES REMOVED)
L7	2133	S ENDOCYTOSIS AND (DNA OR NUCLEIC ACID?)
L8	814	S L7 AND (TRANSFORM? OR TRANSFER?)
L9	3	S L8 AND MUCIN
L10	1	DUP REMOVE L9 (2 DUPLICATES REMOVED)
L11	2	S L8 AND GLYCOGEN
L12	2	DUP REMOVE L11 (0 DUPLICATES REMOVED)
L13	0	S L7 AND (TRANFORM?)
L14	334	S L7 AND (TRANSFORM?)

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 1
ACCESSION NUMBER: 1995:78661 CAPLUS
DOCUMENT NUMBER: 122:177804
TITLE: Carbohydrate receptor-mediated gene **transfer** to human T leukemic cells
AUTHOR(S): Thurnher, Martin; Wagner, Ernst; Clausen, Henrik; Mechtler, Karl; Rusconi, Sandro; Dinter, Andre; Birnstiel, Max L.; Berger, Eric G.; Cotten, Matt
CORPORATE SOURCE: Institute of Physiology, University of Zurich, Zurich, CH 8057, Switz.
SOURCE: Glycobiology (1994), 4(4), 429-35
CODEN: GLYCE3; ISSN: 0959-6658
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The **mucin**-type carbohydrate Tn cryptantigen (GalNAc.alpha.1-O-Ser/Thr, where GalNAc is N-acetyl-D-galactosamine) is expressed in many carcinomas, in hemopoietic disorders including the Tn syndrome, and on human immunodeficiency virus (HIV) coat glycoproteins, but is not expressed on normal, differential cells because of the expression of a Tn-processing galactosyltransferase. Using Jurkat T leukemic cells which express high levels of Tn antigen due to deficient Tn galactosylation, the authors have established the Tn antigen-mediated gene **transfer** and demonstrate the considerable efficiency of this approach. The authors used poly(L-lysine) conjugates of the monoclonal antibody 1E3 directed against the Tn antigen to deliver the luciferase and .beta.-galactosidase reporter genes to Jurkat cells by receptor-mediated **endocytosis**. Addn. of unconjugated 1E3 reduced **transfection** efficiency in a concn.-dependent manner and incubation with free GalNAc abolished **DNA transfer** completely, indicating that gene delivery is indeed mediated by the Tn antigen. Pre-treatment of Jurkat cells with Vibrio cholerae sialidase, which uncovers addnl. Tn antigens, resulted in an improvement of gene **transfection**. Both human and chicken adenovirus particles attached to the **DNA**/polylysine complex strongly augmented transgene expression. When the .beta.-galactosidase (lacZ) gene was delivered to Jurkat cells by Tn-mediated **endocytosis**, up to 60% of the cells were pos. in the cytochem. stain using 5-bromo-4-chloro-3-indolyl-.beta.-D-galactopyranoside (X-gal) as a chromogenic substrate. The efficiency of the **transferrin** receptor-mediated **DNA** uptake into Jurkat cells was comparatively low, although these cells were shown to express considerable amts. of **transferrin** receptor. The authors show here that a **mucin**-type carbohydrate antigen mediates highly efficient **DNA** uptake by **endocytosis** into Jurkat T cells. This method represents a 50-fold improvement of Jurkat cell **transfection** efficiency over other phys. gene **transfer** techniques. Specific gene delivery to primary cancer cells exhibiting Tn epitopes may esp. be desirable in immunotherapy protocols.

L14 ANSWER 6 OF 334 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:883466 CAPLUS
DOCUMENT NUMBER: 134:175965
TITLE: Uptake of **DNA** by keratinocytes
AUTHOR(S): Hengge, U. R.; Tschakarjan, E.; Mirmohammdsadegh, A.; Goos, M.; Meyer, H. E.
CORPORATE SOURCE: Department of Dermatology, Venerology and Allergology,
University of Essen, Essen, 45122, Germany
SOURCE: Skin Gene Ther. (2001), 81-94. Editor(s): Hengge, Ulrich R.; Volc-Platzer, Beatrix. Springer-Verlag: Berlin, Germany.
CODEN: 69ASR6
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English
AB A review with 78 refs. Specific topics discussed include mechanisms of **endocytosis**, mechanisms of **DNA** uptake by keratinocytes, and uptake of plasmid **DNA**.
REFERENCE COUNT: 78
REFERENCE(S): (1) Anderson, R; Annu Rev Biochem 1998, V67, P199 CAPLUS
(2) Beltinger, C; J Clin Invest 1995, V95, P1814 CAPLUS
(3) Benimetskaya, L; Nat Med 1997, V3, P414 CAPLUS
(4) Bennett, R; J Clin Invest 1985, V76, P2182 CAPLUS
(5) Bennett, R; J Exp Med 1987, V166, P850 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 8 OF 334 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:772776 CAPLUS
DOCUMENT NUMBER: 133:318266
TITLE: Use of endosomolytic coxsackievirus particles or peptides for improving cell transfection
INVENTOR(S): Kupper, Jan-heiner; Kandolf, Reinhard; Selinka, Hans-christoph
PATENT ASSIGNEE(S): Eberhard-Karls-Universitat Tubingen Universitatsklinikum, Germany
SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000065075	A1	20001102	WO 2000-EP3588	20000420
W: AU, CA, JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE 19918446	A1	20001123	DE 1999-19918446	19990423

PRIORITY APPLN. INFO.: DE 1999-19918446 19990423

AB The invention relates to non-infectious particles or peptides derived from the coxsackievirus which have endosomolytic activity and/or stimulate **endocytosis** for use in cell transfection. Thus, coxsackievirus B3 capsid particles or peptides derived. from VP1, VP2, or VP3 were combined with Lipofectin and plasmid **DNA** and used for transfection of CHO, H9C2, and HeLa cells as well as fibroblasts and primary adult heart muscle cells. Transfection was more efficient with the coxsackievirus particles or peptides than with adenovirus particles.

REFERENCE COUNT: 11
REFERENCE(S):
(1) Cotten, M; PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES 1992, V89(13), P6094 CAPLUS
(2) Curiel, D; US 5547932 A 1996 CAPLUS
(3) de Verdugo, U; JOURNAL OF VIROLOGY 1995, V69(11), P6751 CAPLUS
(5) Kolbeck, P; WO 9839426 A 1998 CAPLUS
(6) Lindberg, A; VIROLOGY 1987, V156, P50 CAPLUS

L14 ANSWER 12 OF 334 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:533817 CAPLUS
DOCUMENT NUMBER: 133:308014
TITLE: Glycosylphosphatidylinositol-anchored proteins are not required for crosslinking-mediated **endocytosis** or transfection of avidin bioconjugates into biotinylated cells
AUTHOR(S): Wojda, U.; Miller, J. L.
CORPORATE SOURCE: National Institute of Diabetes and Digestive and Kidney Diseases, Laboratory of Chemical Biology, National Institutes of Health, Bethesda, MD, 20892, USA
SOURCE: Biochim. Biophys. Acta (2000), 1467(1), 144-152
CODEN: BBACAQ; ISSN: 0006-3002
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Even though glycosylphosphatidylinositol (GPI)-anchored proteins lack direct structural contact with the intracellular space, these ubiquitously expressed surface receptors activate signaling cascades and **endocytosis** when crosslinked by extracellular ligands. Such properties may be due to their assocn. with membrane microdomains composed of glycosphingolipids, cholesterol and some signaling proteins. In this study, we hypothesize that GPI proteins may be required for crosslinking-mediated **endocytosis** of extracellular bioconjugates. To test this hypothesis, we first biotinylated the surface membranes of native K562 erythroleukemia cells vs. K562 cells incapable of surface GPI protein expression. We then compared the entry of fluorescently labeled avidin or **DNA** condensed on polyethylenimine-avidin bioconjugates into the two biotinylated cell populations. Using fluorescence microscopy, nearly 100% efficiency of fluorescent avidin **endocytosis** was demonstrated in both cell types over a 24 h period. Surprisingly, plasmid **DNA** transfer was slightly more efficient among the biotinylated GPI-neg. cells as measured by the expression of green fluorescence protein. Our findings that GPI proteins are not required for the **endocytosis** of avidin bioconjugates into biotinylated cells suggest that **endocytosis** assocd. with general membrane crosslinking may be due to overall reorganization of the membrane domains rather than GPI protein-specific interactions.

REFERENCE COUNT: 37
REFERENCE(S):
(1) Boussif, O; Proc Natl Acad Sci USA 1995, V92, P7297 CAPLUS
(2) Cinek, T; J Immunol 1992, V149, P2262 CAPLUS
(3) Deckert, M; J Cell Biol 1996, V133, P791 CAPLUS
(4) Diamandis, E; Clin Chem 1991, V37, P625 CAPLUS
(5) Friedrichson, T; Nature 1998, V394, P802 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 13 OF 334 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:504237 CAPLUS
DOCUMENT NUMBER: 133:286308
TITLE: Specific gene transfer mediated by galactosylated poly-l-lysine into hepatoma cells
AUTHOR(S): Han, J.; Il Yeom, Y.
CORPORATE SOURCE: P.O. Box 115, Gene Therapy Research Unit, Korea Research Institute of Bioscience and Biotechnology, Yusong, Taejon, 305-600, S. Korea
SOURCE: Int. J. Pharm. (2000), 202(1-2), 151-160
CODEN: IJPHDE; ISSN: 0378-5173
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Plasmid **DNA**/galactosylated poly-l-lysine(GalPLL) complex was used to transfer luciferase reporter gene in vitro into human hepatoma cells by a receptor-mediated **endocytosis** process. **DNA** was combined with galPLL via charge interaction (**DNA**:GalPLL:fusogenic peptide, 1:0.4:5, wt./wt./w) and the resulting complex was characterized by dynamic light scattering, gel retardation assay and zeta potential analyzer to det. the particle size, electrostatic charge interaction, and apparent surface charge. The complex was tested for the efficiency of gene transfer in cultured human hepatoblastoma cell line Hep G2 and fibroblast cells NIH/3T3 in vitro. The mean diam. of the complex (**DNA**:GalPLL=1:0.4, wt./wt.) was 256.+-.34.8 nm, and at this ratio, it was pos. charged (zeta potential of this complex was 10.1 mV). Hep G2 cells, which express a galactose specific membrane lectin, were efficiently and selectively transfected with the RSV Luc/GalPLL complex in a sugar-dependent manner. NIH/3T3 cells, which do not express the galactose-specific membrane lectin, showed only a marginal level of gene expression. The transfection efficiency of GalPLL-conjugated **DNA** complex into Hep G2 cells was greatly enhanced in the presence of fusogenic peptide that can disrupt endosomes, where the GalPLL-**DNA** complex is entrapped with the fusogenic peptide. With the fusogenic peptide KALA, the luciferase activity in Hep G2 cells was ten-fold higher than that of cells transfected in the absence of the fusogenic peptide. Our gene transfer formulation may find potential application for the gene therapy of liver diseases.

REFERENCE COUNT: 29
REFERENCE(S):
(1) Ashwell, G; Ann Rev Biochem 1982, V51, P531 CAPLUS
(2) Chang, T; J Biol Chem 1982, V257, P12563 CAPLUS
(3) Ciechanover, A; J Cell Biochem 1983, V23, P107 CAPLUS
(4) De Wet, J; Mol Cell Biol 1987, V7, P725 CAPLUS
(6) Erbacher, P; Bioconjug Chem 1995, V6, P401 CAPLUS

L14 ANSWER 14 OF 334 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:494832 CAPLUS
DOCUMENT NUMBER: 133:286307
TITLE: Gene transfer into hepatoma cells mediated by galactose-modified .alpha.-helical peptides
AUTHOR(S): Niidome, Takuro; Urakawa, Mamiko; Sato, Haruya; Takahara, Yoshiyuki; Anai, Toyoaki; Hatakayama, Tomomitsu; Wada, Akihiro; Hirayama, Toshiya; Aoyagi, Haruhiko
CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering, Nagasaki University, Nagasaki, 852-8521, Japan
SOURCE: Biomaterials (2000), 21(17), 1811-1819
CODEN: BIMADU; ISSN: 0142-9612
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To develop a receptor-mediated gene delivery system into hepatoma cells using the cationic .alpha.-helical peptide as the gene carrier mol., we modified an .alpha.-helical peptide, which is known to have transfection abilities into cells, with a multi-antennary ligand contg. several galactose residues that provide efficient binding to the asialoglycoprotein receptor. The galactose-modified peptides formed complexes with a plasmid **DNA** and showed gene transfer abilities into HuH-7 cells, a human hepatoma cell line. The transfection efficiency of the peptide was increased by increasing the no. of modified galactose residues on the peptide. Furthermore, considerable inhibition of the transfection efficiency by the addn. of asialofetuin, which is a ligand for the asialoglycoprotein receptor, was obsd. in all galactose-modified peptides. Based on this result, we could confirm that the internalization of the galactose-modified peptides occurred by the receptor-mediated **endocytosis** pathway. In addn., to understand the transport route of the peptide-**DNA** complex in the cell, the effects on the transfection efficiencies with several **endocytosis** inhibitors were examd. As a result, it was suggested that the translocation of the peptide-**DNA** complex from the endocytic compartments to the cytosol mainly occurred during an early endosome step.
REFERENCE COUNT: 49
REFERENCE(S):
(1) Basu, S; Cell 1981, V24, P493 CAPLUS
(2) Berg, T; Exp Cell Res 1983, V148, P319 CAPLUS
(3) Berry, M; J Cell Biol 1969, V43, P506 CAPLUS
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